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Navy entomologist mentors college students on insects, public health

Filed under FLEET AND THE FLEET MARINE FORCE, FORCE HEALTH AND SAFETY, HEATH

{NO COMMENTS}

By Lt. James Dunford, Centers for Disease Control and Prevention



BACKGROUND ON AUTHOR: Lt. James Dunford had an interest in the study of insects at an early age, and carried that interest to earn a Ph.D. in Entomology and Nematology at the [University of Florida](#). While attending UF, he taught courses on insect identification and general entomology, and was recipient of departmental, college-wide, and national

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teaching awards. During his Ph.D., he received a [Health Care Collegiate Scholarship](#) from the Navy and was commissioned as an officer in the Medical Service Corps in 2008. Lt. Dunford's position as a Navy entomologist has included numerous collaborations and humanitarian missions in Afghanistan; and his primary duties include protecting deployed warfighters from disease-transmitting insects. He is currently stationed at the [Centers for Disease Control \(CDC\) and Prevention](#), Atlanta, Ga., where he works closely with experts in the Division of Parasitic Diseases and Malaria. His work at CDC includes research related to insecticide resistance and evaluation of novel insecticides for control of insects, and he continues to teach and promote entomology, especially as it relates to public health, by mentoring college students interested in aspects of biology and disease prevention.



Medical Entomology interns preparing insecticide study at the Centers for Disease Control (CDC) Insectary, Atlanta Ga., July 2012. Photo by Lt. James Dunford.

In early 2012, I was invited to speak at [Broward College](#), Davie, Fla. on Navy Entomology and careers in public health, and after doing so, Broward faculty member Dr. David Serrano and I had an idea to initiate a competitive application process to fund Broward students to work alongside Naval officers, entomologists, and other public health scientists at CDC. Two out of 15 students that applied were chosen for the summer 2012 internship, and Broward College provided the funding for their stay in Atlanta. The work they conducted at CDC counted as a three-credit course and was included in their academic curriculum. As it turns out, both students chosen in 2012 had witnessed first-hand friends and close relatives afflicted by insect born disease in Brazil. As children, they had seen dengue outbreaks that closed schools and businesses in their towns and had family members chronically ill with Chagas disease (a disease transmitted by kissing bugs). The internship provided both students a

unique opportunity to learn about global public health as it relates to the study of insects that transmit vector-borne diseases such as malaria, dengue, and Chagas, diseases they were already familiar with.

The students worked on several projects, including using different methods to evaluate the effectiveness of insecticides to control mosquitoes as well as the development of new insecticides. They also helped develop and act in an instructional video on how to monitor insecticide resistance in the field. I can't say enough about how well the students performed, and how much I learned from them as we streamlined new protocols and procedures in the lab to evaluate various insect control methodologies. One student has recently been accepted into a physician's assistant program, and thanked the internship for playing a major role in her acceptance into the program. The other has gone on to continue her studies in biology at the University of Florida—hopefully someday focusing on public health entomology!

Service members are not immune to the various insect borne diseases that occur wherever they may find themselves, and Navy entomologists play a major role in keeping members safe from these maladies, and thereby helping to ensure war-fighter readiness. I can't help but think that the professional goals of my former students and future colleagues will enable us to cross paths again on collaborative projects, helping me broaden my scientific knowledge and abilities as they pertain to Navy Medicine. I'm certain they will continue to teach me new things about their respective careers and interests in science. The good thing about students (and aspiring scientists) is that there is endless supply of them, and I look forwarding to mentoring and learning from the next generation of students in the summer of 2013.

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